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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/474,766 12/30/99 IMOEHL W 051252-5028

009629
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QM02/1120

EXAMINER

KIM, C

ART UNIT

PAPER NUMBER

3752

DATE MAILED:

11/20/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/474,766

Applicant(s)
Imoehl

Examiner
Christopher S. Kim

Group Art Unit
3752



☒ Responsive to communication(s) filed on 26 Sep 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-17 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-17 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on 30 Dec 1999 is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on 26 Sep 2000 is ☐ approved ☒ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Response to Amendment

1. Amendment filed September 26, 2000 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Although claim 5 is indicated as being amended, it appears that no changes have been made.

Drawings

4. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on September 26, 200 have been disapproved.

Changes are not highlighted and details are not discernible because of the poor quality.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: on page 4, line 23, "70".
Correction is required.

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Claim Rejections - 35 USC § 112

6. Claims 5, 6 and 10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding claim 5, the specification does not disclose a first surface of a swirl generator disk being adjacent an armature nor a first surface of a guide disk adjacent an armature. Regarding claim 10, the specification does not disclose a first surface of a swirl generator disk adjacent an inlet portion of a body nor a first surface of the guide disk adjacent an inlet portion of a body.

Claim Rejections - 35 USC § 103

7. Claims 1-3, 8, 9, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. in view of Daly et al. and Matsuoka et al.

Muller et al. discloses, in figure 7, a fuel injector comprising: a body 21, 70, 18; an armature 19 (figure 5); a needle 20; a seat 26; a first zone (circumference of 26 below step 75); a second zone (circumference of 26 above step 75); an intermediate zone (section of 26 in contact with step 75); a retention member 74. Muller et al. does not disclose a seal.

Daly et al. discloses, in figure 1, a fuel injector comprising: a seat 48; a first zone (circumference of 48 in contact with 50); a second zone (circumference of 48 in contact with seal 72); and seal 72. Daly et al. does not disclose an intermediate zone.

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Matsuoka et al. disclose, as prior art, a rubber seal 24 which functions as a heat insulator (column 1, lines 52-55).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have placed the seal of Matsuoka et al. between the second zone and the body of Muller et al. as taught by Daly et al. to improve the seal and isolate the seat from the body.

8. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. in view of Daly et al. and Matsuoka et al. as applied to claim 3 above, and further in view of Malinowski.

Muller et al. in view of Daly et al. and Matsuoka et al. disclose the limitations of the claimed invention with the exception of the crimped section. Malinowski teaches a crimped section 46. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have formed the retention member of Muller et al. in view of Daly et al. and Matsuoka et al. by a crimp as taught by Malinowski to ease manufacturing.

9. Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. in view of Daly et al. and Matsuoka et al. as applied to claims 1 and 12 above, and further in view of Virchow.

Muller et al. in view of Daly et al. and Matsuoka et al. disclose the limitations of the claimed invention with the exception of polytetrafluoroethylene. Virchow discloses, in column 3, lines 28-31, polytetrafluoroethylene as a insulating material with a high melting point. It would

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have been obvious to a person having ordinary skill in the art at the time of the invention to have made the seal of Muller et al. in view of Daly et al. and Matsuoka et al. out of polytetrafluoroethylene as taught by Virchow for its high melting point and for its ease in shaping.

Response to Arguments

10. Applicant's arguments filed September 26, 2000 have been fully considered but they are not persuasive.

In response to applicant's argument directed to claims 5, 6, and 10 rejected under 35 U.S.C. 112, first paragraph, although applicant has disclosed a guide 78, a swirl disk 80, an armature 46, and an inlet portion 60, there is no disclosure of:

- a "swirl generator disk **adjacent** the armature" as recited in claim 5;
- a "guide disk **adjacent** the armature" as recited in claim 5;
- a "swirl generator disk **adjacent** the inlet portion of the body" as recited in claim 10; or
- a "guide disk **adjacent** the inlet portion of the body" as recited in claim 10.

Adjacent is defined as:

adjacent (e-jâ'sent) adjective

1. Close to; lying near: adjacent cities.
2. Next to; adjoining: adjacent garden plots.

The American Heritage® Dictionary of the English Language,
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The examiner does not believe that the specification nor the drawing supports an arrangement of the swirl generator or the guide disk close to, near, or next to the armature or the inlet portion of the body.

11. Applicant's arguments with respect to claims 1-4, 7-9, and 11-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reiter and French disclose a valve seat having a first, second, and intermediate zones.

13. Applicant should not misconstrue lack of art rejection as an indication of allowable subject matter.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after


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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (703) 308-8336. The examiner can normally be reached on Monday-Thursday from 6:30 a.m. to 5:00 p.m.

The fax phone number for this Group is (703) 308-7766.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.



David A. Scherbel
Supervisory Patent Examiner
Group 3700

CK

November 17, 2000